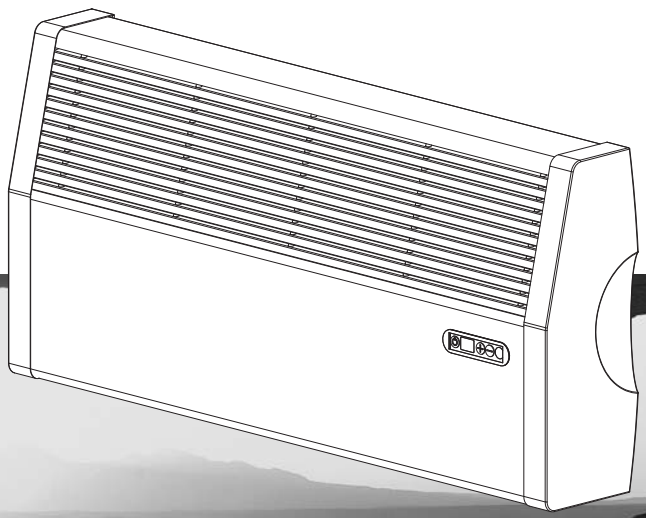
MYSON

Installation, Operating, Maintenance
and After Sales Manual.

LO-LINE RC & LO-LINE RC Heater/Cooler
Models: 6-4, 9-6, 14-10, 19-15



Product Serial Number:

Please leave this manual with the end user.

CE

Part Number: 1370057
Issue 5

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1.0 General Information

- This MYSON LO-LINE fan convector is designed for wall mounted installation with a minimum installation height of 150mm to the underside of the unit.
- The LO-LINE should only be used on closed circulation, two pipe, pump assisted central heating systems (LO-LINE) or heating and cooling systems (LO-LINE Heater/Cooler).
- The LO-LINE Heater and Heater/Cooler can be used on heat pump systems.
- The minimum side clearance is 100mm.
- The maximum ceiling height is 3m.
- Before proceeding with the installation, the heating system design must be considered and the unit correctly sized to meet the heat loss requirements of the room at normal fan speed.
- This unit is supplied with an infra red remote control system and has 3 operating modes -

  Automatic – the desired room temperature is programmed in to the unit and the fan speed is automatically adjusted until the desired room temperature is achieved.

  Fan only – allows user selection of any of the 3 available fan speeds irrespective of room temperature or water temperature in the coil.

  Fan only with water temperature control – allows the user to select any of the available fan speeds, which will operate only if the water temperature in the coil is above 32C. This enables control of the unit via an externally mounted room thermostat if desired.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

  Children should be supervised to ensure they do not play with the appliance.

This unit MUST NOT be installed in a bathroom or other similar high humidity area.

2.0 Heating System Design

This fan convector must be fitted on a two pipe, pumped circulation heating system.

For optimum fan convector heating performance the system must be capable of providing sufficient hot water through the heat exchanger. This means that:

1. The minimum pipe size from boiler to fan convector must be 15mm.
2. **This unit is not suitable for use on microbore pipe-work.**
3. Where the unit is fitted on to a system with other emitters a separate circuit for the fan convector should be considered to provide adequate water flow.
4. The system water must be above 32°C for heating mode.
5. For heat pump applications - see Commissioning Procedure
6. **This unit is NOT suitable for one-pipe systems.**
7. **Optimum performance will require effective balancing of the whole system.**
8. This unit must not be used to replace a radiator in an existing system unless an adequate flow of water through the unit can be guaranteed.

3.0 Unit Selection/Sizing

Heat output performance is given in the Technical Data section of this manual. Outputs are shown for the three fan speeds, however, it is important to size the unit to match the calculated heat loss requirements of the room with the unit operating on the low fan speed. The higher fan speeds are used in automatic mode when the room temperature is significantly lower than the preset temperature.

When establishing the temperature difference, ie mean water to room temperature, allowance should be made for temperature drop in the system. It is the water temperature of the unit which dictates the output.

4.0 Location

- This LO-LINE unit may be fitted to any convenient wall at a height from floor level that suits the application, providing an unimpeded flow of warm air into the area to be heated.
- The minimum distance from the underside of the unit to floor level is 150mm.
- The unit should be mounted on a flat wall, and stud or partition walls should be avoided to minimise the possibility of noise transmission.
- For cooling applications, the need for disposal of condensate may influence the position of the unit.

5.0 Preparation

Before proceeding with the installation, unpack the carton contents and check against the checklist below:

1. LO-LINE or LO-LINE Heater/Cooler unit.
2. 15mm isolating valves (1 pair).
3. Instruction manual.
4. Warranty card.
5. Fixing kit (rubber mounts and cable gland).
6. Remote control handset.

6.0 Fixing

- Using the fixing dimensions (see fig. 1), mark the fixing hole positions on the wall.
- Drill and plug the wall for No. 8 x 40mm round head wood screws ensuring that the wall plugs are suitable for the wall type.
- Remove the backing from two of the self-adhesive washers and place on two of the screws with adhesive side towards the point.
- Tighten the screws into the top two fixing holes leaving about 9mm projecting.
- Press adhesive washers to the wall.
- Remove the backing from the other two self-adhesive washers and place centrally over the bottom two fixing holes.

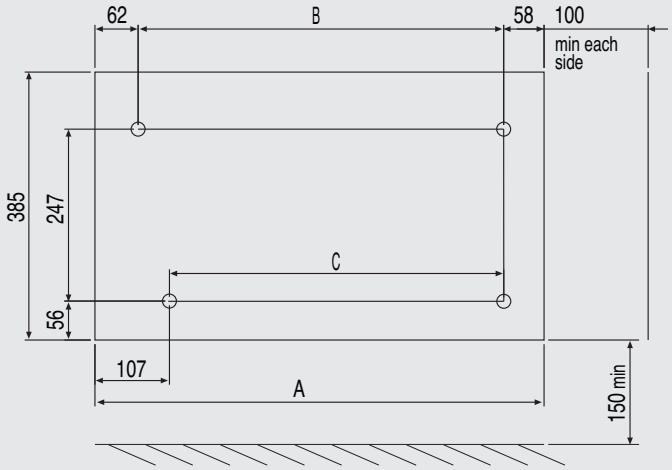

Fig. 1

	Dimensions (mm)		
Unit	A	B	C
19-15	1138	1018	974
14-10	854	733	689
9-6	645	526	481
6-4	523	404	359

Remove the outer casing as follows:

- Remove the 2 screws from the underside of the unit (see fig. 2).
- Lift off the outer case.
- Fit chassis on to the top two mounting screws and tighten.
- Secure the bottom two fixing points with the remaining two screws.

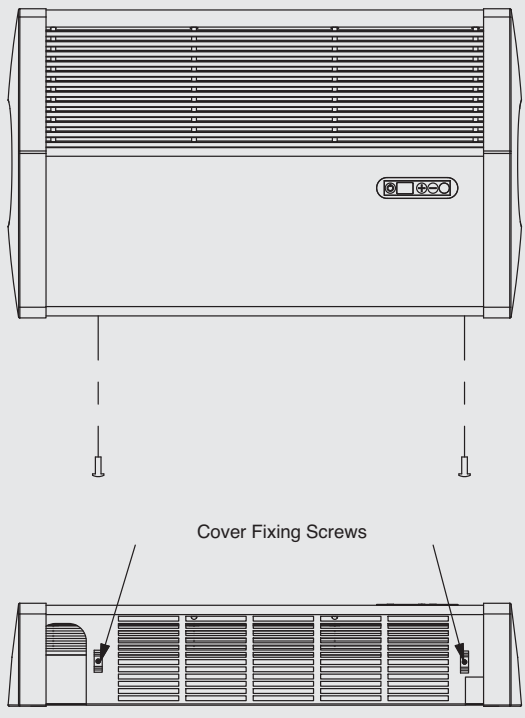

Fig. 2 Case fixing screw positions

7.0 Water Connections

- Connect unit to system flow and return pipes using the two 15mm isolating valves (see fig. 3).

Note: To ensure effective venting of the heat exchanger the flow pipe should be connected to the bottom connection of the heat exchanger.

Note: For LO-LINE installations pipe-work must not be routed directly underneath the unit as this will adversely affect the operation of the integral room thermostat. **If this cannot be avoided, the pipe-work must be boxed to prevent heat rise.**

- Ensure system is flushed in accordance with recognised best practice and a suitable inhibitor is added to the system as necessary.
- Open valves fully, check pipe connections for leaks and vent the heat exchanger - see Commissioning Procedure.

LO-LINE Heater/Cooler installations with chilled water will require provision for condensate disposal in accordance with any local regulations.

A drain tray is fitted for condensate collection within the unit. This should be connected to a 15mm drain pipe.

Note: External pipe-work carrying chilled water must be insulated. Use a suitable sealant as necessary to ensure that condensate does not spill or leak. Once connection to the system flow and return pipes is made, any exposed internal 15mm pipework and isolating valves must be insulated.

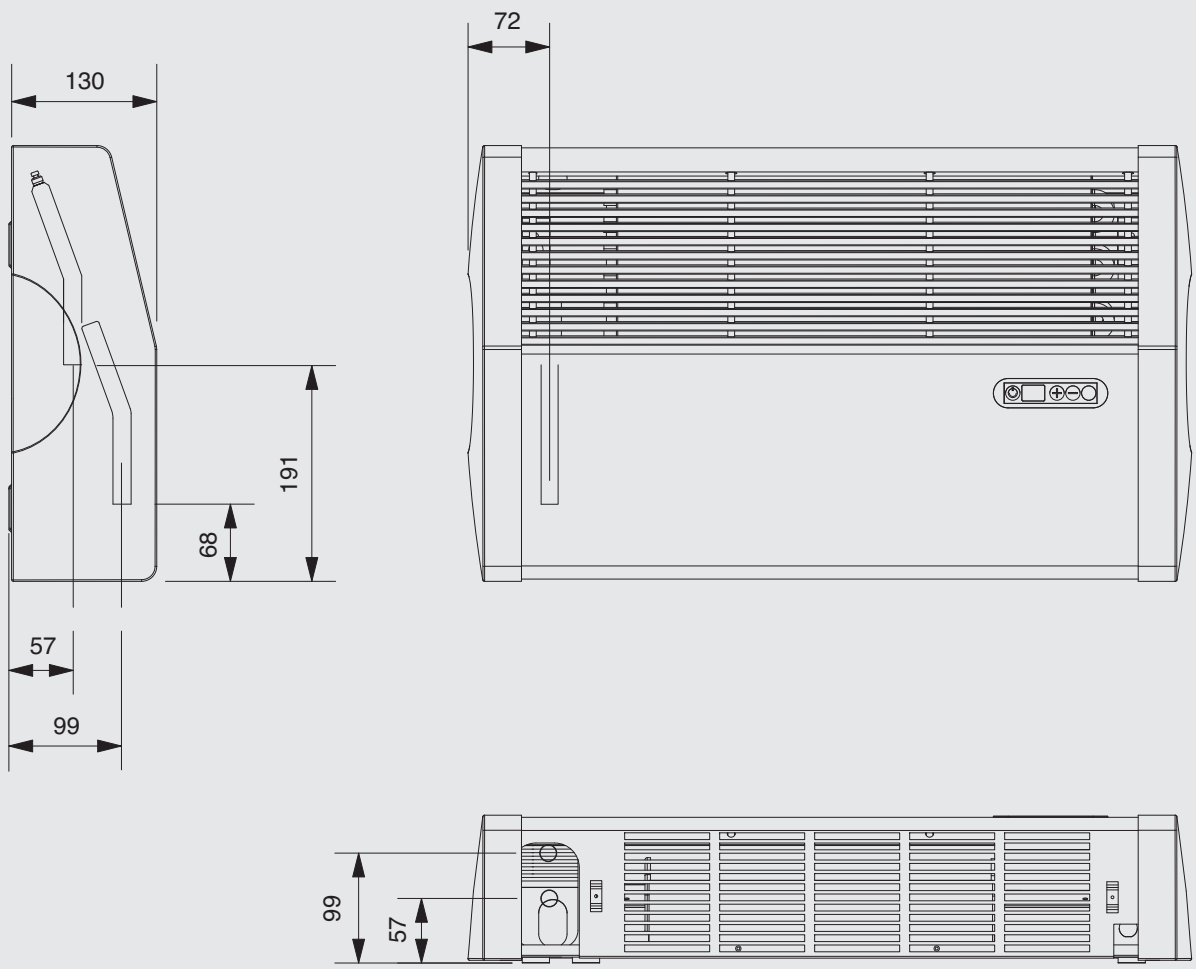

Fig. 3

5.0
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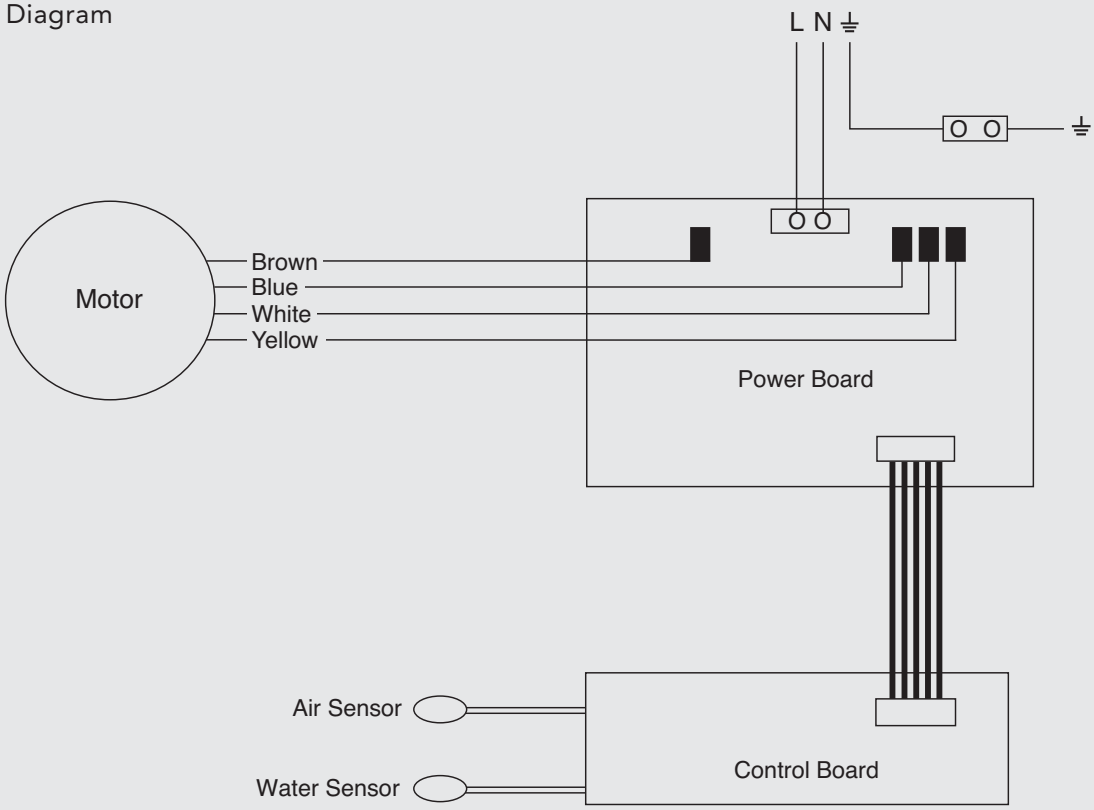
8.0 Electrical Connection

WARNING: This appliance must be earthed. The electrical installation must comply with local or national wiring regulations.

- This unit is supplied with factory fitted test leads. Remove these and discard.
- A fused electrical spur with a maximum 3A fuse and a switch having 3mm separation on all poles must be provided in an easily accessible position adjacent to the unit.
- Electrical cable entry to the unit should be made through the underside of the unit using the cable gland provided, or through the hole provided at the upper right hand corner of the chassis.
- Connect live and neutral wires to the power board terminal connections, and the earth wire to the chassis earth terminal.

Wiring Diagram



9.0 Commissioning Procedure

- Fill and vent the system.
- Open both valves fully and vent air from the heat exchanger by unscrewing the air bleed valve situated above the valves in the angled top of the chassis.
- Check for leaks at pipe connections.
- Refit the outer case and secure using the 2 fixing screws.
- Switch on electrical supply.
- Check the operation of the unit in automatic and manual modes (LO-LINE) or heating and cooling modes (LO-LINE Heater/Cooler) by following the operating instructions.
- When installation and commissioning are complete, hand over instruction manual to end-user.

9.0 Commissioning Procedure (continued...)

Heat Pump and Low Water Temperature Systems

In heating mode, the control system brings the fan on when the water in the coil reaches 32°C. For low water temperature systems, eg heat pump systems, it is possible to switch off the boost speed option in automatic mode so that the unit runs in medium or normal fan speeds depending on demand. This means low outlet air temperatures from the unit are avoided when the room temperature is low in relation to the set temperature.

This facility can be switched on or off by following the instruction below

- Isolate electrical supply.
- Remove outer cover.
- Change switch 1 position according to requirements (see fig. 4).
- Refit outer cover.
- Switch on electrical supply.

Displayed Temperature Calibration

Depending on the location of the unit there may be a difference between the temperature at the unit and the temperature in the middle of the room being heated.

The displayed temperature calibration function enables calibration in heating mode of the displayed temperature to the actual room temperature using the following procedure:

- Run the fan convector until room conditions stabilise.
- Press the 'On/Off' key and '+' key for 5 seconds (the display will flash, alternating between 'ro' and the calibration temperature.
- Calibrate the displayed room temperature by using the '+' and '-' keys with the fan running.
- Press the 'On/Off' key to finish

Fan Pulse

Fan pulse mode causes room air to be drawn over the air temperature sensor periodically to maintain room temperatures more effectively. In certain circumstances, for example when units are over-sized in relation to the heat loss of the room, it may be necessary to turn off this function. Use dipswitch 3 according to requirements.

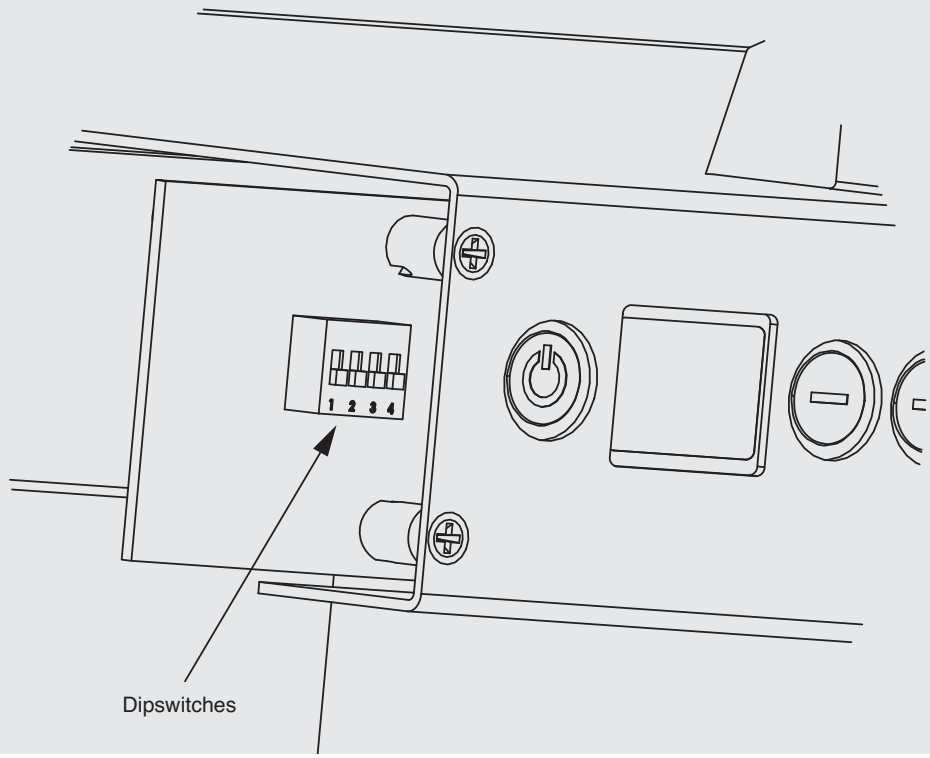


Fig. 4

Switch		Switch Down	Switch Up
1	Auto Fan Speed Selection	2 Speed	3 Speed
2	Heating / Cooling	Heating	Heating & Cooling
3	Fan Pulse	Off	On
4	Temperature Display	°F	°C

10.0 Technical Data

Heating Performance Data

Model	Fan Speed	Heat Output (watts)						Heat Output (Btu/h)					
		Temperature Difference (°C)						Temperature Difference (°F)					
		40°	45°	50°	55°	60°	65°	72°	81°	90°	99°	108°	117°
19-15	Normal	2921	3268	3613	3956	4298	4639	9970	11154	12331	13503	14670	15832
	Medium	3351	3748	4144	4538	4930	5321	11436	12783	14144	15488	16826	18159
	Boost	3751	4197	4640	5081	5520	5957	12803	14323	15836	17340	18839	20331
14-10	Normal	1922	2150	2377	2603	2828	3052	6559	7338	8113	8884	9652	10416
	Medium	2367	2648	2928	3206	3483	3759	8080	9039	9993	10943	11889	12831
	Boost	2803	3136	3467	3796	4125	4451	9567	10703	11833	12957	14077	15192
9-6	Normal	1098	1228	1357	1486	1617	1743	3748	4191	4633	5073	5519	5948
	Medium	1437	1608	1777	1945	2114	2282	4904	5486	6066	6642	7216	7788
	Boost	1811	2026	2240	2453	2665	2875	6182	6916	7645	8372	9096	9816
6-4	Normal	741	829	916	1003	1090	1176	2528	2829	3127	3424	3720	4015
	Medium	843	943	1043	1142	1240	1339	2877	3218	3558	3896	4233	4568
	Boost	1162	1300	1437	1574	1710	1845	3965	4436	4905	5371	5836	6297

Tested in accordance with BS 4856 Part 1.
Flow rate 340 ltr/h (75 gal/h).

Flow Rate Correction Factors:
455 ltr/h (100 gal/h) multiply by 1.06.
227 ltr/h (50 gal/h) multiply by 0.96.
113 ltr/h (25 gal/h) multiply by 0.85.

Approximate Hydraulic Resistance through Fan Convectors

Litres/h	mm wg				kPa			
	6-4	9-6	14-10	19-15	6-4	9-6	14-10	19-15
455	910	998	1240	1670	8.98	9.85	12.20	16.40
340	514	520	719	954	5.06	5.10	7.00	9.40
227	235	121	324	469	2.35	1.18	3.20	4.60
113	47	97	75	77	0.45	0.97	0.75	0.82

Cooling Performance Data

Model	Fan Speed	Cooling Performance (watts)						Cooling Performance (Btu/h)					
		Air-Mean Water Temperature Difference (°C)						Air-Mean Water Temperature Difference (°F)					
		15°		20°		25°		27°		36°		45°	
		Tot.	Sens.	Tot.	Sens.	Tot.	Sens.	Tot.	Sens.	Tot.	Sens.	Tot.	Sens.
19-15	Normal	1340	1104	2002	1345	2734	1452	4572	3767	6831	4589	9328	4954
	Medium	1464	1203	2187	1511	2987	1632	4995	4105	7462	5156	10192	5568
	Boost	1533	1305	2291	1656	3128	1725	5231	4453	7817	5650	10673	5886
14-10	Normal	877	754	1310	969	1788	1034	2992	2573	4470	3306	6101	3528
	Medium	1032	878	1542	1113	2106	1159	3521	2996	5261	3798	7186	3955
	Boost	1228	1052	1835	1347	2505	1427	4190	3589	6261	4596	8547	4869
9-6	Normal	499	423	745	535	1018	553	1703	1443	2542	1825	3473	1887
	Medium	600	507	896	639	1223	655	2047	1730	3057	2180	4173	2235
	Boost	710	581	1061	770	1448	957	2423	1982	3620	2627	4941	3265
6-4	Normal	321	277	480	357	655	383	1095	945	1638	1218	2235	1307
	Medium	391	335	585	429	798	454	1334	1143	1996	1464	2723	1549
	Boost	496	397	741	526	1012	654	1692	1355	2528	1795	3453	2231

Tested in accordance with BS 4856 Part 2. Flow rate 340 ltr/h. Relative humidity 50%.

Noise Levels

Model	Sound Pressures at 2.5m (dBA)		
	Normal	Medium	Boost
19-15	27.2	31.8	38.6
14-10	23.1	28.5	40.1
9-6	21.6	29.6	38
6-4	23.7	31.7	40.7

Weight, Water Content and Motor Power

Model	Motor Power (W)	Water Content (l)	Unpacked Weight (kg)
19-15	80	0.3	7.7
14-10	62	0.32	9.1
9-6	35	0.56	12.7
6-4	35	0.75	15.7

Test Pressure 20bar (2MPa) Maximum Working Pressure 10bar
Water connections 15mm Electrical supply 230V - 50Hz

11.0 Operating Instructions

Description

This LO-LINE unit is fitted with a control system that provides 3 different operating modes. In automatic mode the desired temperature set point is selected and the unit will adjust the fan speed according to the difference between the actual room temperature and the set point. When the room temperature reaches the set point the fan will switch off and thereafter will continue to cycle on and off to maintain the room temperature. The temperature set point range is 15 - 35°C.

In manual mode the automatic temperature control is overridden and any of the three fan speeds can be operated inrespective of the water temperature in the unit. This means that air circulation can be provided in summer for example, or that heating performance can be controlled manually.

In manual mode, with water temperature control, any of the 3 fan speeds can be selected and the fan will operate when the water temperature in the coil is greater than 32°C. This means that heating performance can be controlled manually, and the unit could be controlled via an external room thermostat.

The unit can be controlled using the infra red remote control handset supplied with the unit (see fig. 5) and also using the control panel on the unit (see fig. 6). If necessary, however, the control panel can be locked electronically to prevent tampering once the controls have been set (see over).

Fig. 5

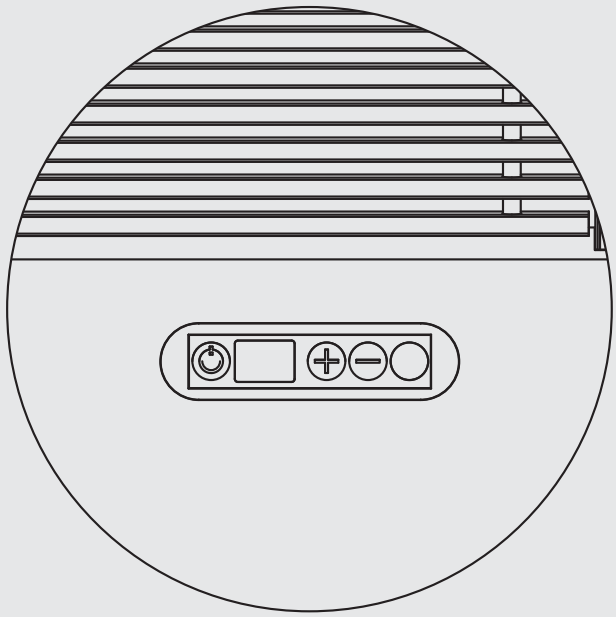


Fig. 6

The remote control hand set takes 2 AAA batteries (not supplied).

Controls	Display
Power button	Switches unit on & off
'+/-' button	Adjust temperature set point from 15 - 35°C Scrolls into F1, F2 or F3 manual mode

Heating

The unit will only operate in heating mode when the central heating boiler is on, the pump is running and the system water temperature is greater than 32°C. Ensure the boiler is on, and set timer, boiler controls and room thermostats as necessary.

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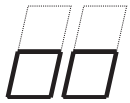
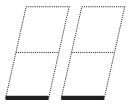
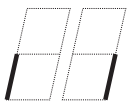
11.0 Operating Instructions (continued...)

Operation	Display	
Power off	No Display	
Switch on supply to unit (unit off)		for 30 seconds
		Supply on / unit off
Switch on unit		Set point flashes for approx 5 secs, then
		Ambient temperature displayed
Use '+/-' to adjust set point		Set point flashes for approx 5 secs, then
		Ambient temperature

The ambient temperature is always displayed unless the water temperature falls below 32°C*, or if the set point is being adjusted.

Water temp <32°C		Shows both power & unit on

*32°C in heating and above 20°C in cooling.

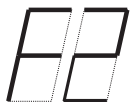
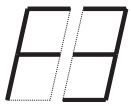
Manual

Manual mode can be used for air circulation without heat or for manual control of the heating function.

Use '+' to scroll beyond 35°C

Or use '-' to scroll below 15°C

Selected fan speed displayed



Continuous fan only

Fan & water temperture (water inlet >32°C)

Scrolling back out of manual using the '+' or '–' button will revert the unit back to last temperature set point.

Cooling Mode

- Close the heating system and isolate any other heat emitters.
- Open the cooling water system.
- Ensure cooling is on, and set cooling unit timer and controls as necessary.

Cooling operation works in exactly the same way as heating. Follow the procedure above to set the unit controls.

Locking Unit Controls

The control panel on the main unit can be locked electronically to prevent interference once the controls have been set. After setting the unit to the desired temperature setting and with the unit in running mode, press the On/Off button on the main unit for about 6 seconds until the two middle horizontal bars appear on the display. The horizontal bars will disappear after about 6 seconds and the unit is in key lock mode.

If any of the unit controls are pressed the horizontal bars will reappear to show the key lock mode is activated, however, during this mode the handset controls remain functional.

To unlock the system press the On/Off button for about 6 seconds until the horizontal bars disappear.

12.0 Troubleshooting

Once installed this fan convector becomes part of a complete heating system that will generally include a boiler, pump, other emitters such as radiators and fan convectors, and a number of heating controls, dependent on system complexity. An apparent problem with this unit may be the result of system controls being incorrectly set and can be solved easily without calling out your installer or MYSON Service. Before calling your installer or MYSON Service, please carry out the checks listed opposite.

Note: If you call out MYSON Service to a fault detailed opposite, or to repair a fault caused by incorrect use, a call out charge will be made.

12.0 Troubleshooting (continued...)

Problem	Possible Causes	Remedy
Heating Mode - No Fan	Unit switched off	Turn on
	Temperature set point reached	Increase temperature set point
	Unit not switched on at fused spur	Switch on at spur
	Fuse blown at fused spur	Replace fuse
	Unit isolating valves shut	Open valves
	Water temperature reaching fan convector below 32°C (Heater model only)	Check boiler - Programmer ON Boiler ON and set to high with central heating pump running **Note:** Operation of fan convector can be checked by switching to manual fan setting
Heating Mode (Heater model only) poor heating performance and/or unit cycles on water sensor	Low water temperature to unit	Turn up boiler thermostat
	Poor water flow	Vent air from heating system **Note:** Operation of fan convector can be checked by switching to manual fan setting

If the fan convector is still faulty after checking the above, call your installer or MYSON Service.

Common Installation Faults

For optimum performance, this unit must be correctly sized to match the heat loss requirements of the space it is required to heat, and the heating system must be correctly designed to provide adequate flow of hot water to the unit (refer to section 2). If the recommendations in section 2 are not followed, problems may arise as detailed below.

Problem	Possible Causes
Poor heating performance (Heater model only)	Unit incorrectly sized for heat loss of room
Heating Mode (Heater model only) poor heating performance and/or unit cycles on water sensor	Boiler thermostat set too low
	Lack of flow to fan convector -
	Pump set on low setting
	Isolating valves not fully open
	System incorrectly balanced with unit starved of hot water flow
	Pipe sizing to unit too small

13.0 Maintenance

Before undertaking any maintenance activity isolate the electrical supply.

Maintenance should be restricted to occasional removal of dust and lint around the unit. The outer surface may be wiped over with warm water and mild detergent taking care to avoid water entering the grille areas.

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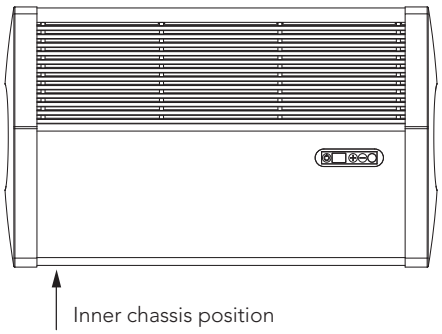
T: 0845 402 3434, F: 0191 491 7568, sales@myson.co.uk, www.myson.co.uk

Serial Number Location:



After Sales Service:

MYSON Service, Somerden Road, Hull, East Yorkshire HU9 5PE
T: 01482 713927, F: 01482 789056, service.convectors@myson.co.uk

Spare parts and technical help on all Convector products are available from MYSON Service.

01.06.2011 ISSUE 5